Amendments to the Claims:

The listing of claims below replaces prior versions of claims in the application:

1. (currently amended): A computer rendering method comprising:

moving a semitransparent plane including a plurality of reflection points relative to an axis; and

rendering an image of the plurality of reflection points at a plurality of positions with respect to the axis such that each said point maps an ~~elongate~~ elongated, continuous image.

2. (original): The computer rendering method as defined in Claim 1, wherein moving the semitransparent plane including the plurality of reflection points relative to the axis comprises rotating the plane about, and translating the plane with respect to, the axis.

3. (original): The computer rendering method as defined in Claim 1, wherein moving the semitransparent plane including the plurality of the reflection points relative to the axis comprises moving the plane of the reflection points perpendicular with respect to the axis.

4. (original): The computer rendering method as defined in Claim 3, wherein moving the semitransparent plane including the plurality of the reflection points perpendicular with respect to the axis further comprising rotating the plane about, and translating the plane with respect to, the axis.

5. (original): The computer rendering method as defined in Claim 1, wherein rendering the image comprises rendering a 3D model from a combination of images of the plurality of reflection points at a plurality of positions with respect to the axis.

6. (previously presented): The computer rendering method as defined in Claim 1, wherein:

a plurality of control points, each being located at an intersection of two axes, define a three-dimensional (3D) surface of a macrostructure;

moving the semitransparent plane including the plurality of reflection points relative to the axis further comprises rotating and translating the plane of the reflection points respectively about and along each said axis of the 3D surface of the macrostructure; and

rendering the image of the plurality of reflection points further comprises rendering a 3D model from a plurality of images of a plurality of positions of the planar plurality of reflection points with respect to each said axis of the 3D surface of the macrostructure.

7. (original): A computer-readable media comprising computer-executable instructions for performing the computer rendering method as recited in Claim 1.

8. (original): A modeling method comprising:

generating a macrostructure for a three-dimensional (3D) object defined by a plurality of axes; and

applying a semitransparent microstructure, defined by planar plurality of reflection points, to the macrostructure by moving the plane of the reflection points with respect to each said axis to yield a 3D model.

9. (original): The modeling method as defined in Claim 8, wherein moving the plane of the reflection points with respect to each said axis comprises rotating the plane about, and translating the plane with respect each said axis while perpendicular thereto.

10. (original): The modeling method as defined in Claim 8, wherein the microstructure simulates a cross section of a material selected from the group consisting of:

human hair;

animal fur;

yarn; and

foliage.

11. (original): The modeling method as defined in Claim 8, wherein the yield of the 3D model comprises rendering the 3D model from a combination of images of the plurality of reflection points at a plurality of positions with respect to the axes.

12. (original): A computer-readable media comprising computer-executable instructions for performing the modeling method as recited in Claim 8.

13. (original): A method for rendering knitwear, the method comprising:

generating a macrostructure for a three-dimensional (3D) object defined by a plurality of intersecting axes;

applying a stitch pattern to each said axis; and

applying a semitransparent lumislice to each said stitch pattern to yield a 3D knitwear model.

14. (original): The method as defined in Claim 13, wherein applying the semitransparent lumislice to each said stitch pattern comprising translating and rotating the lumislice perpendicular to and respectively along and about each stitch of the stitch pattern applied to the plurality of intersecting axes.

15. (original): The method as defined in Claim 13, wherein the yield of the 3D knitwear model comprises rendering the 3D model from a combination of images of the lumislice at a plurality of positions with respect to the axes, wherein the 3D knitwear model accounts for reflective interactions among the lumislices at different locations on the macrostructure.

16. (original): The method as defined in Claim 15, wherein the accounting of the 3D knitwear model for reflective interactions among the

lumislices at different locations on the macrostructure includes at least one of the following:

occlusion;

shadowing; and

multiple scattering among yarn fibers defined by the lumislices.

17. (original): A computer-readable media comprising computer-executable instructions for performing the rendering method as recited in Claim 13.

18. (original): A method for rendering knitwear, the method comprising:

generating a macrostructure, the macrostructure being defined by the plurality of axes connecting a plurality of control points, each said control point being situated at an intersection of at least two of the axes, the plurality of axes defining a three-dimensional (3D) object;

applying a stitch pattern to each said axis; and

applying a yarn microstructure, defined by a planar plurality of reflection points, to each stitch of the stitch pattern applied to each axis defining the 3D object by rotating and translating the plane of the reflection points perpendicular with respect to each said axis to yield a 3D knitwear model.

19. (original): The method as defined in Claim 18, wherein generating the macrostructure is further based on a color pattern.

20. (original): The method as defined in Claim 18, wherein generating the macrostructure comprises:

defining a 3D surface with the control points, the 3D surface being partitioned into quadrilaterals in accordance with the 3D object and corresponding to the stitch pattern; and

for each quadrilateral of the 3D surface, connecting a plurality of key points of the quadrilateral with curved segments to yield a stitch loop, the 3D surface resulting in the macrostructure.

21. (original): The method as defined in of Claim 20, wherein generating the macrostructure is further based on a color pattern, and further comprises, for each curved quadrilateral of the 3D surface, applying a color from the color pattern.

22. (original): The method as defined in of Claim 18, further comprising, prior to generating the yarn microstructure, introducing irregularities in stitch positions of the stitch pattern of the macrostructure.

23. (previously presented): The method as defined in Claim 18, wherein the applying the yarn microstructure comprises:

for each stitch of a plurality of stitches of the stitch pattern of the macrostructure,

for each curved segment of a plurality of curved segments of each said stitch,

applying the yarn microstructure to the curved segment.

24. (original): The method as defined in Claim 18, wherein the 3D knitwear model accounts for reflective interactions among the planar plurality of reflection points at different locations on the macrostructure.

25. (original): The method as defined in Claim 24, wherein the accounting of the 3D knitwear model for reflective interactions among the planar plurality of reflection points at different locations on the macrostructure include at least one of the following:

occlusion of yarn of yarn microstructure;

shadowing of yarn of yarn microstructure; and

multiple scattering among yarn fibers of yarn of yarn microstructure defined by the lumislices.

26. (original): A computer-readable media comprising computer-executable instructions for performing the rendering method as recited in Claim 18.

27. (currently amended): A computer rendering method comprising:

moving a plurality of voxels contained within parallel opposing planes with respect to an axis that is perpendicular to the parallel opposing planes, each said voxel being semitransparent and having a reflectance factor and a plurality of reflection points having a density; and

rendering an image of the plurality of voxels at a plurality of positions with respect to the axis such that at least one said point maps an ~~elongate~~ elongated, continuous image.

28. (original): The method as defined in Claim 27, wherein moving the plurality of voxels contained within parallel opposing planes with respect to the axis comprises rotating the parallel opposing planes about, and translating the parallel opposing planes with respect to, the axis.

29. (original): The method as defined in Claim 27, wherein moving the plurality of voxels contained within parallel opposing planes with respect to the axis comprises moving the plurality of voxels contained within parallel opposing planes perpendicular with respect to the axis.

30. (original): The method as defined in Claim 29, wherein moving the plurality of voxels contained within parallel opposing planes perpendicular with respect to the axis further comprises rotating the plurality of voxels contained within parallel opposing planes about, and translating the plurality of voxels contained within parallel opposing planes with respect to, the axis.

31. (original): The method as defined in Claim 27, wherein:

rendering the image comprises rendering a 3D model from a combination of images of the plurality of reflection points at a plurality of positions with respect to the axis; and

the rendered image accounts for the interaction of each said reflectance factor of each said voxel with respect to the other voxels of the plurality of voxels at each said position of said plurality of positions.

32. (original): The method as defined in Claim 27, wherein:

a plurality of control points, each being located at an intersection of two axes, define a three-dimensional (3D) surface of a macrostructure;

moving the planar plurality of reflection points perpendicular relative to the axis further comprises rotating and translating the plane of the reflection points respectively about and along each said axis of the 3D surface of the macrostructure; and

rendering the image of the plurality of reflection points further comprises rendering a 3D model from a plurality of image of a plurality of positions of the planar plurality of reflection points with respect to each said axis of the 3D surface of the macrostructure.

33. (original): The method as defined in Claim 27, wherein each of the voxels has an associated opacity and voxel reflectance function (VRF).

34. (original): The method as defined in Claim 33, wherein:

the VRF represents the brightness of a voxel viewed from direction $V(\theta_v, \phi_v)$ when illuminated by a unit intensity light from direction $L(\theta_l, \phi_l)$;

the VRF is represented by a four-dimensional color array after discretization of the four angles $\theta_l, \phi_l, \theta_v, \phi_v$;

θ is a longitude angle; and

ϕ is an altitude angle.

35. (original): The method as defined in Claim 34, wherein:

the discretization of the four angles $\theta_l, \phi_l, \theta_v, \phi_v$ comprises the discretization into directional increments;

the directional increments for the longitude angle are $\theta \in [0, 2\pi]$; and

the directional increments of the altitude angle are $\phi_l \in [-\pi/2, \pi/2]$.

36. (original): A computer-readable media comprising computer-executable instructions for performing the rendering method as recited in Claim 27.

37. (original): A method for rendering knitwear, the method comprising:

generating a macrostructure for a three-dimensional (3D) object defined by a plurality of intersecting axes;

applying a stitch pattern to each said axis;

applying a yarn microstructure, defined by a plurality of voxels contained within parallel opposing planes, to the macrostructure by translating and rotating the plurality of voxels contained within parallel opposing planes perpendicular respectively along and about each stitch of the stitch pattern applied to each said axis, wherein each said voxel is semitransparent and has a reflectance factor and a plurality of points having a density; and

rendering a 3D knitwear model from a combination of images of the plurality of voxels at a plurality of positions with respect to the plurality of axes.

38. (original): The method as defined in Claim 37, wherein generating the macrostructure is further based on a color pattern.

39. (original): The method as defined in Claim 37, wherein:

the plurality of axis connects a plurality of control points each being located at an intersection of two of the axes; and

generating the macrostructure comprises:

defining a 3D surface with the control points, the 3D surface being partitioned into quadrilaterals in accordance with the 3D object and corresponding to the stitch pattern; and

for each quadrilateral of the 3D surface, connecting a plurality of key points of the quadrilateral with segments to yield a stitch loop, the 3D surface resulting in the macrostructure.

40. (original): The method as defined in of Claim 39, wherein generating the macrostructure is further based on a color pattern, and further comprises, for each quadrilateral of the 3D surface, applying a color from the color pattern.

41. (original): The method as defined in of Claim 37, further comprising, prior to translating and rotating a plurality of voxels contained within parallel opposing planes, introducing irregularities in stitch positions of the stitch pattern of the macrostructure.

42. (original): The method as defined in Claim 37, wherein applying the yarn microstructure, defined by the plurality of voxels contained within parallel opposing planes, to the macrostructure by translating and rotating the plurality of voxels contained within parallel opposing planes perpendicular respectively along and about each stitch of the stitch pattern applied to each said axis comprises:

for each stitch of a plurality of stitches of the stitch pattern of the macrostructure,

for each curved segment of a plurality of curved segments of each said stitch,

applying the yarn microstructure by translating and rotating the plurality of voxels contained within parallel opposing planes perpendicular respectively along and about each of the curved segments.

43. (original): The method as defined in Claim 37, wherein the 3D knitwear model accounts for reflective interactions from the reflectance factor of each of the voxels of the yarn microstructure applied to the macrostructure.

44. (original): A computer-readable media comprising computer-executable instructions for performing the rendering method as recited in Claim 37.

45. (original): A machine-readable medium having instructions stored thereon for execution by a processor to perform a method for rendering knitwear, the method comprising:

generating a parameterized surface describing a three-dimensional (3D) knitwear macrostructure;

determining a plurality of control points that define the parameterized surface, wherein each said control point is located at an intersection of two axes;

applying a stitch pattern to each of the control points of the knitwear skeleton to form a skeleton of the yarn stitches;

discretizing the skeleton of the yarn stitches into a plurality of discretized yarn segments;

sorting the discretized yarn segments according to a viewing condition of a scene including the knitwear macrostructure and a distance of a view of the scene;

inputting the plurality of discretized yarn segments into:

a geometry of the scene; and

a lighting condition of the scene;

applying a lumislice, with respect to a resolution of the distance of the view of the scene and a sampling density, to each stitch of the stitch pattern of the sorted discretized yarn segments by translating and rotating the lumislice perpendicular to and respectively along and about each stitch of the stitch pattern applied to the plurality of intersecting axes, wherein the lumislice is semitransparent and is computed from a fiber distribution of a yarn cross-section; and

rendering a synthesis of the scene including the knitwear macrostructure using the sorted discretized yarn segments having the lumislice applied thereto, the viewing condition of the scene, and the distance of the view of the scene.

46. (original): The medium of Claim 45, wherein applying a stitch pattern to each of the control points of the knitwear skeleton to form a skeleton of the yarn stitches further comprises applying a color pattern to each of the control points of the knitwear skeleton to form the skeleton of the yarn stitches.

47. (original): The medium of Claim 45, further comprising, before applying the lumislice, computing a shadow map from the geometry of the scene and the lighting condition, wherein the synthesis of the scene is rendered using the computed shadow map.

48. (original): The medium of Claim 45, wherein:

each said lumislice characterizes attributions of a cross-sectional slice of yarn of the yarn stitches that is divided into voxels; and

each of the voxels has an associated opacity and voxel reflectance function (VRF).

49. (original): The medium as defined in Claim 48, wherein:

the VRF represents the brightness of a voxel viewed from direction $V(\theta_v,\phi_v)$ when illuminated by a unit intensity light from direction $L(\theta_l,\phi_l)$;

the VRF is represented by a four-dimensional color array after discretization of the four angles $\theta_l,\phi_l,\theta_v,\phi_v$;

θ is a longitude angle; and

ϕ is an altitude angle.

50. (original): The medium as defined in Claim 49, wherein:

the discretization of the four angles $\theta_l, \phi_l, \theta_v, \phi_v$ comprises the discretization into directional increments;

the directional increments for the longitude angle are $\theta \in [0, 2\pi]$; and

the directional increments of the altitude angle are $\phi \in [-\pi/2, \pi/2]$.